

## THE MOST IMPORTANT PROPERTIES OF VASODILATORS

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**Annotation:** A vasodilator is a drug that causes vasodilation, a widening (opening) of blood vessels that results from relaxation of the smooth muscle of the vessels. What widens in vasodilation actually is the diameter of the interior (lumen) of the vessel. The opposite of vasodilation is vasoconstriction.

**Key words:** vasodilators, blood, stress, hypertension.

Vasodilators are medicines that open, also called dilate, blood vessels. Vasodilators affect the muscles in the walls of the arteries and veins. They prevent the muscles from tightening and the walls from narrowing. As a result, blood flows more easily through the vessels.

Vasodilators are drugs that open your blood vessels. Your provider may prescribe vasodilators to treat high blood pressure, chest pain or heart failure. Most people take vasodilators as part of an overall treatment plan. To improve your heart health, you also need to eat a nutritious diet, exercise and manage stress.

Vasodilators are medicines that dilate (open) your blood vessels. Vasodilators keep your arteries and veins from narrowing or contracting (squeezing) shut.

You have two main types of blood vessels. Veins carry blood to your heart, while arteries carry blood from your heart to the rest of your body.

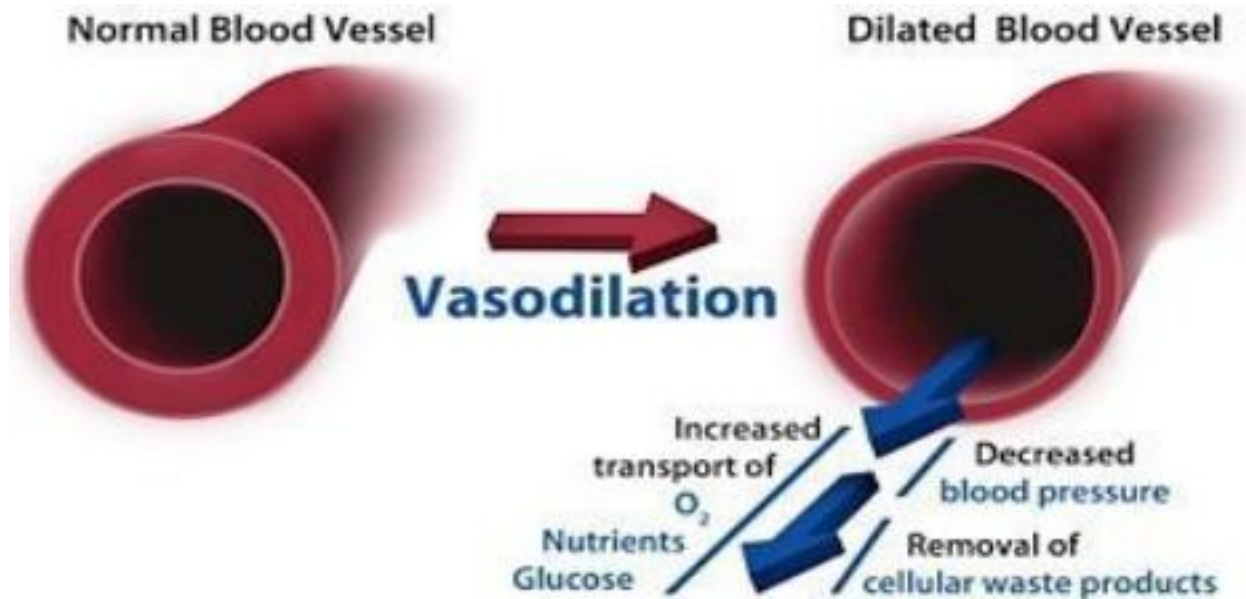
Vasodilation is blood vessel widening (or getting bigger). It occurs when the muscles in your blood vessel walls relax. When you take a vasodilator, the blood vessel's middle interior (lumen) is the part that widens.

There are several types of vasodilator medications, and they all work slightly differently. Direct vasodilators directly affect the muscle cells that line your blood vessels. They make your muscle cells relax so that blood vessels open. Because they work quickly, they can cause more side effects. Healthcare providers use direct vasodilators when other treatments haven't worked.

Other vasodilators control the chemicals that make your blood vessels expand or contract. They are effective but work more slowly.

Types of vasodilators include:

Angiotensin-converting enzyme (ACE) inhibitors decrease ACE enzymes. Decreasing ACE enzymes lowers angiotensin. Angiotensin is a chemical that causes blood vessel constriction (narrowing). ACE inhibitors are direct vasodilators.



Angiotensin receptor blockers (ARBs) keep angiotensin from attaching to your blood vessel walls. Preventing this attachment opens your blood vessels. ARBs are indirect vasodilators, not direct vasodilators.

Calcium channel blockers (CCBs) prevent calcium from going into your artery walls. Your arteries use calcium for constriction, so blocking calcium leads to artery opening. CCBs are systemic vasodilators, not direct vasodilators.

Nitrates convert to a gas called nitrous oxide. Nitrous oxide activates specific chemicals that help open your blood vessels. Nitrates are direct vasodilators.

Direct vasodilators are strong medicines. Typically, healthcare providers only prescribe them when other treatments have failed to control symptoms.

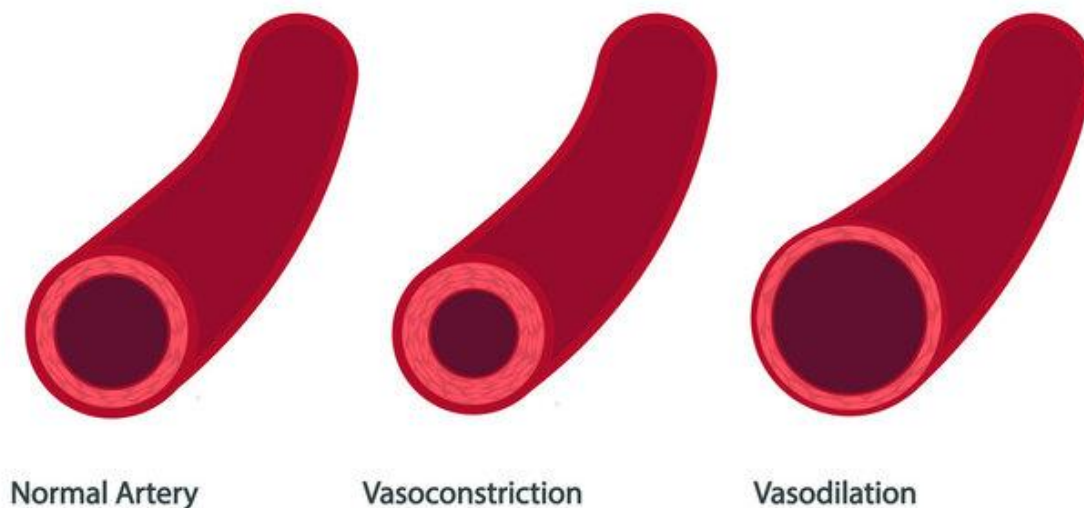
Direct vasodilators may cause more severe side effects than other types of vasodilators. Sometimes, these side effects are severe enough that you need other medicines to treat the side effects. For example, a vasodilator may cause water retention, which can raise pressure and lead to congestive heart failure. You may need to take a diuretic to help your body release the additional fluid.

Some types of vasodilators cause more severe effects, and the effects can vary from person to person. You and your provider may need to try several medicines to find one that works well with the fewest side effects. When you take vasodilators, you may have:

- Dizziness.
- Dry cough (with ACE inhibitors).
- Edema (fluid retention).
- Fatigue.
- Headaches.

- Joint pain.
- Heart palpitations or rapid heartbeat (tachycardia).
- Nausea and vomiting.

How long you need to take vasodilators depends on what condition the medicine is treating. For example, if you take vasodilators to treat preeclampsia, you may stop taking the drug after you give birth. But if you have a chronic condition such as pulmonary hypertension, your provider may keep you on vasodilators long-term.



Sometimes, you can manage chronic conditions through lifestyle changes. For example, you may lower your blood pressure by losing weight and exercising regularly. Your provider will monitor any chronic conditions and guide your treatment options.

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